THE SCIENCE NEWS-LETTER

A Weekly Summary of Current Science

EDITED BY WATSON DAVIS

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OFF

SCIENTISTS PLEDGE SUPPORT TO TENNESSEE PROFESSOR ARRESTED FOR TEACHING EVOLUTION

Prof. M. I. Pupin, President of American Association for Advancement of Science, Calls Arrest Lawless Act and Says "Self-Respecting American Citizens" Must Aid Defense.

The Scientists of America, 14,300 strong, were called to the support of freedom of teaching and of evolution, when Prof. Michael I. Pupin, issued through Science Service the following statement in regard to the case brought in Tennessee under the recent anti-evolution law:

"As President of the American Association for the Advancement of Science I pledge support in the defense of the Tennessee teacher arrested for teaching evolution; this support to accord with the resolution of Association's Committee of Drs. Conklin, Davenport, and Osborn. The American Civil Liberties Union can count upon the Association providing scientific expert advisers in defense of Professor Scopes. This case will be a test case, which was bound to come sooner or later, and its trial will define the law, if there be any in a lawless procedure like this arrest. Both as fair-minded scientists and as self-respecting American citizens we must aid in this trial."

Professor Pupin is the inventor of the system of loading coils on wires that makes long-distance telephony possible, and is well known to the public through his fascinating autobiography, "From Immigrant to Inventor". He holds the chair of Electro-Mechanics at Columbia University.

The American Association for the Advancement of Science is the largest general science society in the United States. It has 14,300 members and 86 special scientific societies are affiliated or associated with it.

Three years ago the Association appointed a committee composed of Dr. E. G. Conklin, professor of biology at Princeton University and author of "Heredity and Environment in the Development of Man", Dr. Charles B. Davenport, director of the Station for Experimental Evolution of the Carnegie Institution of Washington at Cold Spring Harbor, Long Island, and author of "Body Build and Its Inheritance"; and Dr. Henry Fairfield Osborn, President of Trustees of American Museum of Natural History, New York, and author of "Men of the Old Stone Age", to report a resolution on evolution. The resolution recommended by the committee and adopted by the council of the association

reads:

"Inasmuch as the attempt has been made in several states to prohibit in tax-supported institutions the teaching of evolution as applied to man, and

"Since it has been asserted that there is not a fact in the universe in support of this theory, that it is a 'mere guess' which leading scientists are now abandoning, and that even the American Association for the Advancement of Science at its last meeting in Toronto, Canada, approved this revolt against evolution, and

"Inasmuch as such statements have been given wide publicity through the press and are misleading public opinion on this subject,

"Therefore, the council of the American Association for the Advancement of Science has thought it advisable to take formal action upon this matter, in order that there may be no ground for misunderstanding of the attitude of the association which is one of the largest scientific bodies in the world, with a membership of more than 11,000 persons, including the American authorities in all branches of science. The following statements represent the position of the council with regard to the theory of evolution.

"(1) The council of the association affirms that, so far as the scientific evidences of the evolution of plants and animals and man are concerned, thereis no ground whatever for the assertion that these evidences constitute a 'mere guess'. No scientific generalization is more strongly supported by thoroughly tested evidences than is that of organic evolution.

"(2) The council of the association affirms that the evidences in favor of the evolution of man are sufficient to convince every scientist of note in the world, and that these evidences are increasing in number and importance every year.

"(3) The council of the association also affirms that the theory of evolution is one of the most potent of the great influences for good that have thus far entered into human experience; it has promoted the progress of knowledge, it has fostered unprejudiced inquiry, and it has served as a n invaluable aid in humanity's search for truth in many fields.

"(4) The council of the association is convinced that any legislation attempting to limit the teaching of any scientific doctrine so well established and so widely accepted by specialists as is the doctrine of evolution would be a profound mistake, which could not fail to injure and retard the advancement of knowledge and of human welfare by denying the freedom of teaching and inquiry which is essential to all progress."

By rearranging her kitchen utensils, a Virginia woman recently saved herself 323 steps a day or nearly 3 miles of walking a month.

The United States is using up its timber four times as fast as it is growing.

EVIDENCES FOR EVOLUTION

NO.1

THOUSANDS OF NEW TYPES OF LIFE PRODUCED WITHIN PAST CENTURY

Dr. Davenport Declares Animals and Plants Constantly Change-
Testimony of Nature is Scientist's "Word of God".

By Dr. C. B. Davenport,
Director, Department of Genetics, Carnegie Institution of Washington

(Dr. Davenport is one of the leading geneticists of the country. The many researches of the Station for Experimental Evolution at Cold Spring Harbor, Long Island, N. Y., are under his direction.)

The fundamentalist complains that his faith and that of his children is being shaken by the discoveries and conclusions of the biologist. This faith is based on the teaching, directly or indirectly, of the clergy whose statements the fundamentalist accepts as truth.

The biologist has a faith also which is very precious to him and that faith is based on observation of nature and the experimental study of nature's phenomena, and for him, the answers that nature gives to his questions are more significant than the assertions of the clergy.

Fundamentalists accept what they have been told about the accuracy of description of the origin of the universe given in the Scriptures. The biologist will accept the authority of no man, not even the man who presumes to state that the description of the origin of the world in the Bible is the "Word of God". The biologist has his own idea of what is the word of God. He believes it to be the testimony of nature. This testimony has to be wrong, as it were, out of nature but in this way evidence can be secured and has been secured that is incontrovertible.

Among the many lines of evidence, one of the most significant is that derived by the study of the origin of new forms under domestication. All kinds of organisms were not made at the beginning of the world. There are now thousands of forms of animals and plants that reproduce their kind which did not exist a century ago. Within the last ten years there have been produced scores of forms of the banana fly never before seen by the eye of man. Indeed, the very day on which the ancestors of some new types first appeared is known and many of these types have persisted to the present day.

We know indeed not a few forms which have appeared recently and which fulfil the essential conditions of species as the naturalist finds them in nature. These forms differ by two or more constant traits from other species. They are quite as infertile with other species as some wild species are with each other. The principal difference between them and wild species is that their beginnings have been seen and are known to be recent while that of wild species has not been seen and so their origin is of unknown date.

But it is known that thousands of wild species, that we have on earth today, did not exist in earlier geological ages just as there are thousands of species that lived in past geological ages that are not living today.

The conception of a world that does not change is one that may have seemed possible to monks shut in their cells; but every one, who has travelled and observed widely, knows that the face of the earth is changing; and every one who has lived with and bred animals and plants knows that they too are changing.

EVIDENCES FOR EVOLUTION

NO.2

MAN'S INSTINCTS AND EMOTIONS SHOW

EVOLUTIONARY LINK WITH ANIMALS

Biologist Holds that Nerves, Muscles, Glands, and Structure are Evidence of Filial Relation with Rest of Nature

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By Dr. William E. Ritter,
President of Science Service.

(Dr. Ritter was formerly director of the Scripps Institution for Biological Research and professor of Zoology at the University of California. He is author of the "Unity of the Organism" and the "Usefulness of Science".)

Down to a few years ago nearly all the facts on which rested the hypothesis that man originated from lower forms of life by some marvelous process of natural transformation were drawn from studies on bodily structure. Fossil remains, physical organization of men and other creatures now living, and developing embryos, were the almost exclusive sources of such facts.

But now that researches into the activities and mental life of all sorts of men, in comparison with all sorts of inferior beings, has been and is being pursued on a vast scale and with great accuracy facts from this other source apparently having the same meaning are coming to light inastonishing numbers. Charles Darwin foreshadowed the new era of investigation by his book "The Expression of the Emotions in Man and Animals". But the most positively scientific gate-opening into this great realm was made nearly simultaneously by the American psychologist, William James, and the Danish physiologist, Carl Lange. The combined results of these initial labors was what is known as the James-Lange theory of the emotions.

The main facts invoked by this theory are too obvious to escape any one: All emotional states as of joy, grief, fear, anger, jealousy, love, are associated with more or less characteristic bodily manifestation, these often seeming to involve the entire physical framework. The theory says the bodily states thus manifested actually constitute the emotions. It is not, as the older theories had it, that the body is played upon as it were, by some independent entity, as a spirit, something as a piano is played upon by a pianist, but that the living organism's mode of responding to certain influences from the external world are the emotions.

With some modification later research has strengthened and extended this theory. All our sentiments, emotions, passions, the noblest and the basest alike, are the working together in response to stimulation, of sense organs, nerves, muscles, blood vessels, viscera, glands. Finally, only yesterday and today come the discoveries of internal secretions and vitamins which are essentially special agencies for exciting the various body parts to their appropriate actions. Consequently, so much to the front have the activities of animal organisms been brought by the new discoveries and theories, that reflex actions, tropisms, instincts, appetites, emotions, passions, have become the central interests of the day not only in the science of mind but in art, literature, and nearly all practical life.

And through these activities, subject as they surely are to the laws of phsiology and heredity, man's identification with the whole of living nature is made direct and inevitable. There is not an item in the list of structures and activities mentioned that is not common to men and some, if not the whole, of the animal world.

If all this does not mean filiation by descent with animate nature generally, what does it mean?

We have reached a point in the study of man where it becomes clear that whatever theory of his origin shall finally prevail must be accordant with the major facts of his daily life. Andanyone who would contend that these facts do not necessitate belief in some form of evolution or natural transformation is compelled by the fact that he himself possesses the power of reason, to produce a rational theory of his origin that accords better with the facts of his own nature and the nature of all living beings than does any transformational theory.

EVIDENCES FOR EVOLUTION

NO. 3

ACTUAL ORIGIN OF SPECIES HAPPENS

BEFORE EYES OF OBSERVING NATURALISTS

Evolution Authority Says Sudden Modifications Called Mutations Give Rise to New Species of Plants and Animals.

By Dr. Vernon Kellogg,
Permanent Secretary, National Research Council

(Dr. Kellogg, before he became the head of the National Research Council, was professor of entomology and lecturer in evolution at Stanford University. He is author of "Evolution", "Darwinism Today", and "Evolution and Animal Life".)

When any kind of animal or plant produces offspring these young resemble their parents - but never exactly. There are always differences; lesser or greater. These differences are called variations.

Most of these variations are mere fluctuations around a mean and are not necessarily repeated in the next generation. Some of them, which may be more marked, are undoubtedly due to varying environmental influences and also are not repeated in later generations unless these generations are reared under the same kind of environment.

But sometimes some of these variations reappear in the next and all the succeeding generations, even though the environment surrounding the development of these succeeding generations is not the same as that which surrounded the first generation in which the variations appeared. Such variations are inherited. They breed true.

Such heritable or fixed variations are called mutations, meaning that from one kind of plant or animal a new kind has been produced by a persisting change or sudden little jump. This is the production of a new kind of animal or plant. This is species-forming by mutation. It is the easiest kind of origin of species to observe. It has been observed by many naturalists. These naturalists have seen evolution actually happening.

A kind of little fly, called fruit-fly, which has been very carefully studied for several years by various naturalists, chief of whom is the American zoologist, Thomas H. Morgan of Columbia University, has given rise, under their eyes, to many mutations. These are new kinds of fruit flies. Most of them are not kinds better fitted for existence than the original kind of fly from which they arose. But some are sufficiently fit to persist. They can hold their own in the struggle for existence. They are new additions to the kinds of fruit-flies. They are visible evidences of the present-day evolution of animal kinds.

Similarly, botanists have seen new kinds of plants arise by mutations. The most famous cases of this kind are the mutations of the evening primrose, first carefully observed and described by the great Dutch botanist De Vries of the University of Amsterdam, and later observed and studied by German, English and American botanists. These new kinds of evening primroses, arising by fixed "jumps" or mutations from a species called Lamarck's evening primrose, are visible evidences of the present-day evolution of plant kinds.

EVIDENCES FOR EVOLUTION

No. 4

TOOLS OF OLD STONE AGE PROOF OF MAN'S CULTURAL EVOLUTION

Early Progress of Human Invention Extended Over Several Hundred Thousand Years, says Anthropologist

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By Dr. George Grant MacCurdy,
Curator, Anthropological Collections, Yale University,
Author of "Human Origins", etc.

The evolution of human culture is well exemplified by a study of the artifacts of the Old Stone Age in Europe. This Age covered a period of several hundred thousand years. It is commonly divided into two periods - the Eolithic and the Paleolithic; the latter is subdivided into Lower, Middle, and Upper Paleolithic. Cultural evolution has its parallel in organic evolution, and, like the latter, its pathway is strewn with extinct forms. Of the two, cultural evolution is subject to more rapid changes, its chief basis being human inventiveness. One invention leads to others by a system of budding and branching; so that a single invention may give rise to a whole cluster of related activities forming what

might be called a culture-complex unit. The oldest clusters of human activities, of which we have definite knowledge are the lithic and fire complexes; the lithic complex was superseded in part and supplemented by the use of such organic materials as bone, ivory, and reindeer horn, which characterized the game-animal complex.

In a comparative study of the industrial remains of these various periods, there are certain broad distinctions to be drawn. Eolithic industry consisted largely of improvisations - of primary tools or implements such as the hammerstone and the flint chip with utilizable edge or point. Secondary tools were few and simple, consisting largely of artificial chips; during the Lower Paleolithic Period, the number of secondary tools was increased by the addition of the cleaver, a pointed implement chipped on both faces. A primary tool is one ready to hand - furnished by nature; a secondary tool is one which requires the use of a tool in its manufacture; tertiary tools are those, which in their shaping require the use of primary and secondary tools and whose ultimate purpose is not the shaping of implements.

The Neandertalians of the Middle Paleolithic Period made no great advances over their predecessors. They possessed an improved technique, which is seen in the character of their nuclei and well formed scrapers and points with carefully retouched margins; but so far as can be ascertained, they did not go beyond the making of secondary tools - that is to say, their secondary tools served directly an ultimate purpose, were not used for the manufacture of tertiary tools. The technical processes from Pliocene times to the close of the Middle Paleolithic Period (well along toward the close of the Pleistocene) remained relatively simple.

It was reserved for the Upper Paleolithic Cro-Magnon races to inaugurate a new era. This was made possible through improvement in the preparation of nuclei, from which long slender blades could be struck. The next step was important additions to their stock of secondary tools (various forms of the graver, microliths, small knives and awls) which enabled them to make extended use of bone, ivory, and reindeer horn, leading to two capital results - the invention of a set of tertiary tools and the dawn of the fine arts.

Upper Paleolithic or Cro-Magnon culture was very early transformed through the addition of the secondary shaping tools produced from bladelike flint flakes without which it would not have been possible to make an array of tertiary tools such as the bone needle, the javelin point of bone, ivory, or reindeer horn, the javelin shaft, the dart or javelin thrower, and the harpoon of reindeer horn; nor would the Cro-Magnons have been able to embellish their dart throwers and satisfy a rapidly developing artistic sense by producing various objects of art and of personal adornment.

DOGS DECLARED DISEASE CARRIERS

Homes where the heart is opened to the dog may have the doors opened to diseases of many kinds, was the warning issued by Dr. Minas Joannides, of Minneapolis, Minn., at the American Medical Association meeting recently. Stressing the importance of treating the dog as a dog and not as a human being, Dr. Joannides explained that dogs may carry tuberculosis, diphtheria, scarlet fever, measles, smallpox and rabies. They are particularly the only primary host of tapeworm, and often carry fleas, ticks and lice.

"Don't allow your dog to sleep in your bed or eat off your plate," he advised. If a man likes his dog well enough to make a member of the family out of him, Dr. Joannides advised that he keep the animal clean and train him to avoid contact with infected materials.

NEW ANIMALS PRODUCED FROM OLD IN PERU

The age-old effort of the Incas to interbreed different species of their native wool-bearing animals and thus obtain types combining several desirable qualities seems at last to have met with success - at the hands of the white man, however. Two hybrids have been produced at the experimental farm at Puno, Peru, under the direction of Col. R. J. Stordy.

One of these newcomers is the "huarizo", a cross between the llama and the alpaca, the other the "paco-vicuna", a cross between the domestic alpaca and the wild vicuna. Whether these animals will be fertile and reproduce is not yet known, according to Wilson Popenoe, agricultural explorer who has recently returned to Washington from Peru.

The llama, one of the ancestors of the new "huarizo", has for centuries been the cow and the horse and the "ship of the Andes" to the people of Peru, Bolivia and Ecuador. It is the largest of the four camoloid types of wool-bearing animals native to this region. It is said that centuries before the European conquest it has been domesticated from the wild huanaco by the Indians who prized it as a gift from the gods, without which there would be no existence, trade or travel.

Huge numbers of these animals were said to have existed at one time. Spanish chroniclers say that 300,000 of them were used to carry the gold and silver from the mines of San Luis Potosi to the waiting galleons of the Spaniards. Today the number is not so great but these animals, nevertheless, are the only means of transportation , and sources of food and clothing to the large part of the population.

Although it is the largest of these animals, the llama's flesh is not exactly a delicacy, and its coat of wool is coarse and rough. The alpaca, the other parent of the "huarizo", is smaller and has a wool whose quality is prized in commerce. By interbreeding these two it was hoped to obtain wool that was finer than that of the llama and in quantity greater than that of the small alpaca.

But the rarest of all the small humpless camel-like animals of the Andes is the vicuna. Graceful as a gazelle, it is still wild or half wild and inhabits the high mountain ranges and inaccessible places bordering the region of perpetual snow. It was a prize to the hunters seeking it among the rocky precipices of Ecuador, Peru and Bolivia. Its wool and skin have always been considered of special value, a poncho of vicuna being worth a mint of money today. This and the fact that it had to be killed to obtain its wool have nearly caused its extinction. Today there are very stringent regulations for its protection.

This graceful animal, although wild, has an amount of curiosity that often made it the victim of the hunter. It can be captured and tamed and even domesticated to some extent. By crossing this animal with the alpaca it is hoped to obtain a type that will be easily domesticated and propagated in large numbers. The wool if obtainable in quantities should have a great commercial value, for that of the alpaca is noted for its lightness and strength and its ability to take dye, while that of the vicuna is unsurpassed in softness and beauty.

The U. S. Air Service has established a landing field for airplanes which overlooks the great crater of the famous Kilauea volcano in Hawaii.

MEDICAL PROGRESS "MIRACULOUS" IN LAST HALF CENTURY

Recounting the romance of modern medicine before an audience of more than four thousand doctors from all over the United States at the annual session of the American Medical Association, Dr. William D. Haggard , of Nashville, Tenn., newly installed president of the association, told how the last fifty years of medicine has witnessed more achievements of miraculous character than the five whole centuries preceding.

Enumerating some of the medical discoveries which have aided mankind he called anesthetics and antisepsis the greatest contributions for they have made the achievements of modern surgery possible. Next to those, he considers the control of tuberculosis, yellow fever, typhoid and syphilis the greatest boon of medicine to the human race.

Although many diseases have been conquered and insulin has come to the aid of the diabetic patient, there are yet countless problems to solve, Dr. Haggard pointed out.

"There is yet no specific for pneumonia, which with all the other acute respiratory diseases, destroys more lives every day than any other ailment. The causes of smallpox, measles, mumps, chicken-pox and the much dreaded sleeping sickness are as yet undetected. Cancer, the most pitiless of all maladies, is our rebellious and still elusive foe," he added.

Emphasizing the economic importance of being healthy, Dr. Haggard pointed out that the number of cases of sickness in the United States in a year is thirteen and a half million, and economically amounts to a loss of a billion dollars annually. The two hundred and twenty-five million sick days a year in the United States, estimated by Dr. Haggard, are equivalent to about two days of sickness a year for every person in the United States.

He urged the importance of preventive medicine and advocated for that purpose a survey of the apparently healthy, a "drive to treat the incipiently sick while they can be cured". "Medicine," said Dr. Haggard, "is the only profession which is literally and altruistically devoted to professional suicide, because it endeavors chiefly, not to cure, but to prevent disease."

YEAR'S TOLL ADDS 1600 CHILD CRIPPLES

There are five cripples among every thousand people in the United States, Dr. F. A. Gaenslen, of Milwaukee, Wis., told the Association members. If it were possible to prevent infantile paralysis, which is responsible for one third of all juvenile cripples, rickets, and joints tuberculosis, the number of cripples could be reduced greatly, he said. About 1600 child cripples are added each year to the ranks of the lame.

Ants do not like castor oil for Brazilian agricultural experts have found that the slowly burnt seed of the castor oil plant produces fumes that not only kill the ants but prevents the nest from being reinfested.

MANY MENTAL DISEASES CURABLE

Declaring that there is a general tendency to under-estimate the chances of recovery from mental diseases, Dr. Earl D. Bond, of Philadelphia, speaking before the American Medical Association, said that about one-quarter of the patients admitted to a large private hospital for such diseases recovered. Results were verified by observations covering periods of from five to ten years.

Dr. Irving J. Sands of Brooklyn urged the establishment of psychiatric clinics in connection with general hospitals, to be used as information bureaus on general mental hygiene which would prove of great value to organizations, school authorities and courts which frequently seek advice on matters of mental disorders.

"They would prove an effectual weapon for combatting the ever increasing number of quack, illegal practitioners, and faddists," he claimed.

DOCTORS CALL POWDER AND PAINT MENACE TO FLAPPERS' HEALTH

Medical science has come to the aid of the flapper by examining her powders and paints, hair dyes and nail polishes, and has declared that many of these are harmful and can cause skin disease, sickness and even death. Drs. Hiram E. Miller and Lawrence R. Tausig, of San Francisco, confessed, however, before the section on dermatology of the American Medical Association that it would be unwise for the medical profession to combat beauty doctors and charlatans who are responsible for the wide use of many harmful preparations directly, but that more could be accomplished by educating the public an enacting laws to prohibit the use of poisonous preparations.

"Many face powders are in themselves harmless," they said, "but their continued use causes the mechanical obstruction of the pores. Powder 'compacts' cause more obstruction than loose powders, but by using cold cream at night to remove the powder bad effects are avoided. While powders and rouges may not cause skin disease the aniline dyes that color them may cause irritation.

"Nearly all hair dyes are poisonous. They not only damage the hair by making it brittle and dry, but they may cause a rash on the forehead and neck."

Drs. Miller and Tausig condemned the three types of wrinkle removers in vogue, the astringent method, the use of paraffine injections and the use of carbolic acid. The told of women who had been given this latter treatment by which the skin is removed, and who have suffered permanent disfigurement and in some cases death.

NEW MACHINE TOOL CUTS METAL ONE THIRD FASTER

A new form of tool which cuts metal at higher speeds and in larger chips than is practicable with the standard tools now used was described to the American Society of Mechanical Engineers meeting by its inventor, Dr. Hans Klopstock of Berlin, Germany. Tests made in foreign railroad shops, Dr. Klopstock claimed, indicate that production can be increased about 30 per cent. by means of the new tool.

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DAILY SCIENCE NEWS BULLETIN
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(EDITORS: This is the third of a series of articles, written by authorities, which answer the question "What is Evolution?". Tomorrow's article will be by Dr. George Grant MacCurdy, anthropologist of Yale University, who will discuss the cultural proof of evolution.)

EVIDENCES FOR EVOLUTION

No. 3

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Evolution A uthority Says Sudden Modifications Called Mutations Give Rise to New Species of Plants and Animals.

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MEDICAL PROGRESS "MIRACULOUS"
IN LAST HALF CENTURY

Release Wednesday morning, May 27. (By Science Service)

Atlantic City, N.J., May 26.- Recounting the romance of modern medicine before an audience of more than four thousand doctors from all over the United States meeting here for the annual session of the American Medical Association, Dr. William D. Haggard, of Nashville, Tenn., newly installed president of the association, told how the last fifty years of medicine has witnessed more achievements of miraculous character than the five whole centuries preceding.

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DOG DANDRUFF OFTEN
CAUSES ASTHMA

Release Thursday afternoon, May 28. (By Science Service)

Atlantic City, N.J., May 28.- Asthma is only skin deep and if patients would have a skin test made to find just what they are sensitive to, successful treatment could be given, according to Dr. Albert H. Rowe of Oakland, Calif., who spoke before the American Medical Association here today.

Horse, dog, and cat dandruff are the most frequent causes of asthma, and wheat, eggs, milk and other cereals are in order of sequence the common foods to cause the disease, although any food may be responsible.

DOCTOR URGES CAREFUL MODELLING
OF SYNTHETIC NOSES

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Atlantic City, N.J., May 28.- Synthetic noses should be "good for both blow and show" in the opinion of Dr. Vilray P. Blair of St. Louis, who described before the American Medical Association in session here today modern methods of constructing new noses where old ones have been destroyed or found faulty. A doctor should bestow as much consideration when cutting out new noses as a dressmaker puts on a piece of goods and he should have an accurate pattern prepared before cutting into the tissues, he said. He must allow for shrinkage and for trimming when he transplants tissue in order to produce good end results. The hard parts or the cartilagenous structure of the nose are put in only after the soft parts have healed into place. Material for the new noses is provided by taking flaps of skin and underlying tissues from the forehead or from the arm of the patient.

DO YOU KNOW THAT -

A nts do not like castor oil for Brazilian agricultural experts have found that the slowly burnt seed of the castor oil plant produces fumes that not only kill the ants but prevents the nest from being reinfested.

A n electrolytic method of plating various metals with chromium has been devised at Columbia University.

Malaria carrying mosquitoes work all the year around in Palestine.

The silo is a storehouse that preserves feed in its most natural form with the smallest amount of shrinkage and waste.
